BRUHAT BANGALORE MAHANAGARA PALIKE

MEASUREMENT SHEET

RA 2ND AND PART BILL

Name of work: Improvements to Roads and Drains at Yerappa Garden in Ward No. 09 (Vidyaranyapura).

Estimated Cost : Rs. 96.00 Lakhs

Job Code: 009-22-000011

Head of Account : P-0190 Works Sancrioned by Hon. Mayor

Name of Agency: M/s. K. R Constructions, Prop: C. Mahesh, No. 286, 7th B Cross, Jakkur Layout, Bangalore.

Work order No: BBMP/EE/BTP/WO/55/2022-23 Dated: 29-06-2022.

	Measurements Recarded on :	28.04.2023								
Sl No	**Description of work**	**Mesurement**						**Qty.**	**Rate / Unit**	**Amount**
		No.	**L**	**B1**	**B2**	**Av.B**	**D**			
1	Dismantling of existing structures like culverts, bridges, retaining walls and other structure comprising of masonry, cement concrete, wood work, steel work, including T&P and scaffolding wherever necessary, sorting the dismantled material, disposal of unserviceable material and stacking the serviceable material with all lifts and lead I By Manual Means B Cement Concrete Grade M-15 & M-20									
									Cum	
	Previous qty vide First and Part Bill							**5.04**		
	Present Qty							**NIL**		
2	Dismantling of existing structures like culverts, bridges, retaining walls and other structure comprising of masonry, cement concrete, wood work, steel work, including T&P and scaffolding wherever necessary, sorting the dismantled material, disposal of unserviceable material and stacking the serviceable material with all lifts and lead (iii) Dismantling Stone Masonry B Rubble stone masonry in cement mortar.									
									Cum	
	Previous qty vide First and Part Bill							**9.48**		
	Present Qty							**NIL**		
3	Earth work Excavation by manual means for drains,canals, waste weir, draft, approach channels, key trenches, foundation of bridges and such simillar works in all kinds of soils , as per drawing and technical specifications, including setting out, shoring, strutting, barricading, caution lights, removal of stumps and other deleterious matter, excavated surface leveled and sides neatly dressed disposing off the excavated stuff or sorting & stacking the selected stuff for reuse in a radius of 50 m and lift upto 1.5 m including cost of labour, tools & other appurtenaces required to complete the work.									
									Cum	
	Previous qty vide First and Part Bill							**584.91**		
	Present Qty							**NIL**		

Sl No	Description of work	Mesurement						Qty.	Rate / Unit	Amount
		No.	L	B1	B2	Av.B	D			
4	Providing and laying in position Plain Cement Concrete Mix 1:3:6 (M10) for levelling course for all works in foundation. Using 40 mm nominal size graded crushed coarse aggregates and fine aggregates as per relevant IS Codes machine mixed, laid in layers not exceeding 150 mm thickness, well compacted using plate vibrators, including all lead & lifts, cost of all materials of quality, labour, Usage charges of machineries, curing, and all the other appurtenances required to complete the work as per technical specifications.									
									Cum	
	Previous qty vide First and Part Bill							**71.18**		
	Present Qty							**NIL**		
5	Providing and laying in position Reinforced Cement Concrete for all Sub structures of building, Irrigation works, Sub structure works of bridges, Drain works & other parallel works from 0.50m to 3.50 m height. The granite/trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed with super plasticisers, laid in layers, well compacted using needle vibrators, providing weep holes wherever necesary, including all lead & lifts, cost of all materials of quality, confirming to the requirements of relevant IS codes, labour, Usage charges of machinery, curing and all other appurtenances required to complete the work as per technical specifications. M20 (The cost of steel reinforcement & formwork to be paid separately)									
									Cum	
	Previous qty vide First and Part Bill							**139.06**		
	Present Qty							**NIL**		
6	Supplying, Fitting and Placing un-coated TMT bar Reinforcement in sub-structure complete as per Drawing and Technical Specifications.									
									Tonne	
	Previous qty vide First and Part Bill							**8.92**		
	Present Qty							**NIL**		
7	Providing and Fixing pre cast Covering Slab made out of CC 1:2:4 with 10cm thick and Finishing cutting ,including form work,curing,including cost of alll materials, labour,hire charges of machinery, loading, unloading, lead and lift, transportation etc, copmplete. (Data									
									Sqm	
	Previous qty vide First and Part Bill							**893.43**		
	Present Qty							**NIL**		
8	Providing and Fixing pre cast covering Slab 250mm thick made out of CC 1:2:4 and jelly 20mm Down size with steel reinforcement including form work,curing,including cost of alll materials, labour,hire charges of machinery, loading, unloading, lead and lift,transportation etc ,complete.As per Engineer incharge									
									Sqm	
	Previous qty vide First and Part Bill							**48.24**		
	Present Qty							**NIL**		

Sl No	Description of work	Mesurement						Qty.	Rate / Unit	Amount
		No.	L	B1	B2	Av.B	D			
9	Earth work in surface Excavation by mechanical means for lowering & leveling the ground for all works other than foundation in all kinds of soils & upto depth not exceeding 300mm as per drawing and technical specifications, including setting out, shoring, strutting, barricading, caution lights, removal of stumps and other deleterious matter including dressing of excavated surfaces, disposing off or levelling the excavated earth or sorting & stacking the selected earth for reuse in a radius of 50 m and lift upto 1.5 m including cost of labour, tools, usage of machinery & other appurtenances required to complete the work. In all kinds of soils upto 300 mm depth.									
									Cum	
	Previous qty vide First and Part Bill							**180.03**		
	Present Qty							**NIL**		
10	Compaction of original ground by mechanical means including filling in depression occuring during rolling including cost of all labour, HOM complete as per specifications.									
									Sqm	
	Previous qty vide First and Part Bill							**514.38**		
	Present Qty							**NIL**		
11	Construction of Granular Sub-Base of required grading as per design mixing in a mechanical mix plant at OMC, carriageof mixed Material to work site, spreading in uniform layers with motor grader on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401 (For Grading -V Material)									
									Cum	
	Previous qty vide First and Part Bill							**77.16**		
	Present Qty							**NIL**		
12	Providing, laying, spreading and compacting graded stone aggregate to Wet Mix Macadam specification including premixing the Material with water at OMC in mechanical mix plant carriage of mixed Material by tipper to site, laying in uniform layers with paver/grader in sub-base / base course on well prepared surface and compacting with vibratory roller to achieve the desired density									
	For New Road								Cum	
	Previous Qty							128.60		
	Present Qty	Qty as per Premeasurement vide E-MB Page No. 01 is =						178.64		
	Total		Total Qty =					**307.24**		
			Deduct Previous Qty =					**-128.60**		
			Present Qty					**178.64**	2765.07	**493952.00**
13	Cleaning the existing WBM Road surface including removing of binding materials and other foreign matter with wire brushes and small picks sweeping with brooms or soft brushes and finally dusting with old gunny bags and bar or compressed air to receive bituminous treatment including cost of all materials, labhour, HOM of machineries complet as per specifications.									
									Cum	
	Qty as per Premeasurement vide E-MB Page No. 02 is =							**1262.02**	22.26	**28093.00**

Sl No	Description of work	Mesurement No.	L	B1	B2	Av.B	D	Qty.	Rate / Unit	Amount
14	Providing and applying Primer Coat with SS1 grade Bitumen Emulsion on prepared surface of granular base including cleaning of road surface and spraying primer at the rate of 0.90 kg per m2 using mechanical means									
									Cum	
	Qty as per Premeasurement vide E-MB Page No. 03 is =							**1262.02**	48.40	**61082.00**
15	Providing and laying Dense Graded Bituminous Macadam with 40/60 TPH capacity HMP using crushed aggregates of specified grading, premixed with bituminous binder VG-30, @ 4.5 per cent by weight of total mix and filler, transporting the hot mix to work site, laying with mechanical paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRTH specification clause No. 505 complete in all respects									
									Cum	
	Qty as per Premeasurement vide E-MB Page No. 04 is =							**63.10**	11421.80	**720716.00**
16	KSRRB 500-2.Cleaning the existing black topped surface with brooms,soft brushes and finally dusting with old gunny bags and / or compressed air to receive bituminous treatment including cost of all materials, labour, HOM of machineries complete as per specifications.									
									Sqm	
	Qty as per Premeasurement vide E-MB Page No. 05 is =							**1262.02**	5.30	**6689.00**
17	Providing and applying Tack Coat with RS1 Bituminous Emulsion using emulsion pressure distributor at the rate of 0.25 kg/m2 on the prepared bituminous surface cleaned with mechanical broom									
									Sqm	
	Qty as per Premeasurement vide E-MB Page No. 06 is =							**1262.02**	16.50	**20823.00**
18	Providing and laying Bituminous Concrete with 40/60 TPH capacity hot mix plant using crushed aggregates of specified grading, premixed with bituminous binder VG-30, @ 5.4 percent of mix and filler, transporting the hot mix to work site, laying with mechanical paver finisher to the required grade,level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH specification clause No. 507 complete in all respects									
	Yerappa Garden									
	4th Cross Seetharamaiah Layout	1	2.30	5.30	5.40	5.35	0.04	0.49		
		1	15.00	5.80	5.20	5.50	0.04	3.30		
		1	15.00	5.20	5.80	5.50	0.04	3.30		
		1	15.00	5.80	5.40	5.60	0.04	3.36		
		1	15.00	5.40	5.90	5.65	0.04	3.39		
		1	15.00	5.90	4.90	5.40	0.04	3.24		
		1	15.50	4.90	6.00	5.45	0.04	3.38		
	4th Cross Seetharamaiah Layout									
		1	15.00	5.70	5.65	5.68	0.04	3.41		
		1	15.00	5.65	5.60	5.63	0.04	3.38		
		1	15.00	5.60	5.50	5.55	0.04	3.33		

AEE (VRP) SD

Sl No	Description of work	Mesurement						Qty.	Rate / Unit	Amount
		No.	L	B1	B2	Av.B	D			
		1	6.10	5.50	5.70	5.60	0.04	1.37		
	3rd Cross									
		1	15.00	3.50	3.20	3.35	0.04	2.01		
		1	15.00	3.20	3.30	3.25	0.04	1.95		
		1	15.00	3.30	4.10	3.70	0.04	2.22		
		1	7.10	4.10	3.00	3.55	0.04	1.01		
	2nd Cross									
		1	15.00	5.70	4.60	5.15	0.04	3.09		
		1	15.00	4.60	5.15	4.88	0.04	2.93		
		1	15.00	5.15	6.00	5.58	0.04	3.35		
		1	9.50	6.00	4.50	5.25	0.04	2.00		
	Total							**50.48**	13318.31	**672319.00**

Assistant Engineer
Ward No. 09

Assistant Executive Engineer
Vidayaranyapura Sub Division

Assistant Executive Engineer
Vidyaranyapura Sub Division
B.B.M.P, Bangalore - 97

Sl No	Description of work	Mesurement No.	L	B1	B2	Av.B	D	Qty.	Rate / Unit	Amount
	Measurements Recarded on :	28.04.2023								
19	Road Marking with Hot Applied Thermoplastic Compound with Reflectorising Glass Beads on Bituminous Surface Providing and laying of hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads @ 250 g/ m2 area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC:35:2015.The finished surface to be level, uniform and free from streaks and holes.									
	Yerappa Garden									
	4th Cross Seetharamaiah Layout	2	2.30			0.10		0.46		
		2	15.00			0.10		3.00		
		2	15.00			0.10		3.00		
		2	15.00			0.10		3.00		
		2	15.00			0.10		3.00		
		2	15.00			0.10		3.00		
		2	15.50			0.10		3.10		
	4th Cross Seetharamaiah Layout									
		2	15.00			0.10		3.00		
		2	15.00			0.10		3.00		
		2	15.00			0.10		3.00		
		2	6.10			0.10		1.22		
	3rd Cross									
		2	15.00			0.10		3.00		
		2	15.00			0.10		3.00		
		2	15.00			0.10		3.00		
		2	7.10			0.10		1.42		
	2nd Cross									
		2	15.00			0.10		3.00		
		2	15.00			0.10		3.00		
		2	15.00			0.10		3.00		
		2	9.50			0.10		1.90		
	Total							**50.10**	552.09	**27660.00**
20	Dismantling of cement concrete pavement by mechanical means using pneumatic tools, breaking to pieces not exceeding 0.02 m3 in volume and stock piling at designated locations and disposal of dismantled materials and stacking serviceable and unserviceable materials separately									
									Cum	
	Qty as per Premeasurement vide E-MB Page No. 07 is =							**64.47**	487.41	**31423.00**
21	Construction of Dry Lean Cement Concrete Sub- base over a prepared sub-grade with coarse and fine aggregate conforming to IS: 383, the size of coarse aggregate not exceeding 25 mm,aggregate cement ratio not to exceed 15:1, aggregate gradation after blending to be as per table 600-1, cement content not to be less than 150 kg/ m3 , optimum moisture content to be determined during trial length construction, concrete strength not to be less than 10 Mpa at 7 days, mixed in a batching plant, transported to site, laid with a paver with electronic sensor, compacting with 8-10 t vibratory roller, finishing and curing.									
									Cum	
	Qty as per Premeasurement vide E-MB Page No. 08 is =							**48.36**	4846.38	**234371.00**

Sl No	Description of work	Mesurement No.	L	B1	B2	Av.B	D	Qty.	Rate / Unit	Amount
22	Providing and constructing un-reinforced plain Cement Concrete Pavement, thickness as per design, over a prepared sub base, with 43 grade cement or any other type as per Clause 1501.2.2 M30 (Grade), coarse and fine aggregates conforming to IS:383, maximum size of coarse aggregate not exceeding 25 mm, mixed in a concrete mixer of not less than 0.2 cum capacity and appropriate weigh batcher using approved mix design, laid in approved fixed side formwork (steel channel, laying and fixing of 125 micron thick polythene film, wedges, steel plates including levelling the formwork as per drawing), spreading the concrete with shovels, rakes, compacted using needle, screed and plate vibrators and finished in continuous operation including construction joints, , primer, sealant , curing of concrete slabs for 14- days, and water finishing to lines and grade as per drawing and technical specification clause 1501 with all lead, lifts, loading & unloading charges, cost and conveyance of all materials, labour, equipments etc., complete MORTH Specification No.1501 . as per the directions of the Engineer-in-charge of the work.									
	Yarappa Garden									
	Cross Road 1	1	15.00	4.30	3.30	3.80	0.15	8.55		
		1	15.00	3.30	5.50	4.40	0.15	9.90		
		1	3.00	5.50	4.60	5.05	0.15	2.27		
	Cross Road 2	1	13.70	3.75	3.20	3.48	0.15	7.14		
		1	15.00	4.80	5.20	5.00	0.15	11.25		
		1	12.20	5.20	4.90	5.05	0.15	9.24		
	Total							**48.36**	7896.74	**381848.00**
23	Cutting transverse contraction joints 3 to 4 mm wide and depth 60mm in concrete slab using concrete cutting machine with diamond studded saw within 48 hours of casting of bay / slab etc. complete including subsequent widening of the groove 8 to 10 mm. wide at top having depth of 15 mm. as directed by Engineer incharge. MORTH Specification No. 602.6.3(PWD SR 2021-22 Vol -III Pg 146 item no 4)									
	Yarappa Garden									
	Cross Road 1	3	4.30					12.90		
	Cross Road 2	4	4.80					19.20		
	Total							**32.10**	77.00	**2472.00**
24	Providing to contraction joints polysuphide sealent (Pouring grade) confirming to BS : 5212 - 1989 into sawed groove widened at top for sealent reservoir of specified size and shape as per detailed drawing including fixing Polyethylene foam backer rod of required diameter (approx. 25% larger than the initial 3 mm.to 4 mm. joint) overlaid with bond breaking tape as per detailed drawing. Item includes cleaning the joints with water jet / air compressor and allowing joint to become thoroughly dry before sealent is applied and applying primer. (A) Contraction and longitudinal joints (15 mm. deep x 8mm.wide). MORTH Specification No. 602.6.3(PWD SR 2021-22 Vol -III Pg 147 item no 5)									
	Qty Vide frm Item No-23							32.10		
	Total							32.10	181.50	**5826.00**
25	Loading and Unloading of Stone Boulder/Stone aggregates/ Sand/Kankar/Moorum. (Tipper 14 m3)									

Sl No	Description of work	Mesurement						Qty.	Rate / Unit	Amount
		No.	L	B1	B2	Av.B	D			
	Previous qty vide First and Part Bill							764.94	Cum	
	Present Qty							**NIL**		
26	Cost of Haulage Excluding Loading and Unloading Taking output 18 t load and lead 10 km = 180 t.km									
	Previous qty vide First and Part Bill							979.12	T.Km	
	Present Qty							**NIL**		
									Sub Total B	**2687274.00**
									Add GST Charges @ 6%	**483709.00**
									Grand Total Amount	**3170983.00**

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